CLAIMS

What is claimed is:

1. An apparatus for measuring radial displacement of a wheel having first and second beads circumscribing an axis, said apparatus comprising:

a mount assembly for rotating the wheel around said axis;

a sensing device movable radially relative to said axis; and

a bead engaging element pivotably connected to said sensing device for simultaneously engaging the first and second beads and moving said sensing device radially relative to said axis as the first and second beads vary in radial distance from said axis around the wheel to detect the combined offset of the first and second beads from said axis for generating a first signal representing the average radial displacement of the first and second beads.

2. An apparatus as set forth in claim 1 further including said bead engaging element defined by a rigid bar.

3. An apparatus as set forth in claim 2 wherein said rigid bar is further defined by a pair of plates spaced from one another and having a core extending between said plates and equally spaced from said terminal ends.

4. An apparatus as set forth in claim 2 further including a pair of rollers each rotatably supported at the respective terminal ends of said plates for facilitating slidable engagement of said rollers with said first and second beads.

5. An apparatus as set forth in claim 4 further including a pin extending through said sensing device and said rigid bar for facilitating pivotable motion of said rigid bar relative to said sensing device.

6. An apparatus as set forth in claim 5 including a pair of bushings circumscribing said pin and disposed between said rigid bar and said sensing device radially relative to said pin for preventing radial disposition of said rigid bar relative to said sensing device.

7. An apparatus as set forth in claim 1 including a supporting element operably connected to said sensing device for facilitating slidable movement of said sensing device within said supporting element and with respect to said axis.

8. An apparatus as set forth in claim 7 including a resilient device cooperably connected to and extending between said supporting element and said sensing device for biasing said bead engaging element against the wheel.

9. An apparatus as set forth in claim 8 including a first sensor operably connected to said sensing device for responding to displacement of said sensing device relative to said supporting element in response to said combined offset of the first and second beads as the first and second beads vary in radial distance from said axis.

10. An apparatus as set forth in claim 9 including a first comparative software electronically connected to said first sensor for averaging said combined offset to generate said first signal representing the average radial displacement of the first and second beads.

11. An apparatus as set forth in claim 10 including a second sensor operably connected to said mount assembly for sensing a phase angle of rotation of said mount assembly for generating a second signal corresponding to the radial position of said combined offset of the first and second beads.

12. An apparatus as set forth in claim 11 including a second comparative software operably connected to said first and second sensors for integrating said first and second signals and generating a third signal.

13. An apparatus as set forth in claim 12 including an applicator operably connected to said apparatus for receiving said third signal directing said applicator to mark the wheel.

14. An apparatus for measuring radial displacement of a wheel having first and second beads each having first and second beads circumscribing an axis, said apparatus comprising:

a mount assembly for rotating the wheel around the axis;

a first device pivotably connected to a second device and movable with respect to the axis;

a first sensor for sensing said radial displacement of the wheel;

a second sensor for sensing a phase angle of rotation of said mount assembly for generating a second signal;

a controller for receiving and integrating said first and second signals; and

said second device having a first feeler cooperably connected to a second feeler, said first and second fillers simultaneously engaging the upper and lower beads for measuring radial displacements of the upper and lower beads, wherein said second device is operably connected to said first sensor thereby signaling said controller said radial displacements of the upper and lower beads.

15. An apparatus as set forth in claim 14 further including said second device defined by a rigid bar.

16. An apparatus as set forth in claim 15 further including said rigid bar defined by a pair of plates spaced from one another and having a core extending between said plates and equally spaced from said terminal ends.

17. An apparatus as set forth in claim 15 wherein each of said first and second feelers are further defined by a roller rotatably supported at the respective terminal ends of said plates for facilitating slidable engagement of said rollers with said first and second beads.

18. An apparatus as set forth in claim 17 further including a pin extending through said first device and said rigid bar for facilitating pivotable motion of said rigid bar relative to said first device.

19. An apparatus as set forth in claim 18 further including a pair of bushings circumscribing said pin and disposed between said rigid bar and said first device radially relative to said pin for preventing radial disposition of said rigid bar relative to said first device.

20. An apparatus as set forth in claim 1 including a supporting element operably connected to said first device for facilitating slidable movement of said first device within said supporting element and with respect to said axis.

21. An apparatus as set forth in claim 14 including a resilient device cooperably connected to and extending between said supporting element and said first device for biasing said second element against the wheel.

22. An apparatus as set forth in claim 14 wherein said first sensor is operably connected to said first device for responding to displacement of said first device relative to said supporting element in response to said combined offset of the first and second beads as the first and second beads vary in radial distance from said axis.

23. An apparatus as set forth in claim 14 including a first comparative software electronically connected to said first sensor for averaging said combined offset to generate said first signal representing the average radial displacement of the first and second beads.

24. An apparatus as set forth in claim 14 including a second comparative software operably connected to said first and second sensors for integrating said first and second signals and generating a third signal.

25. An apparatus as set forth in claim 14 including an applicator operably connected to said apparatus for receiving said third signal directing said applicator to mark the wheel.

26. An apparatus for rotating a workpiece, comprising:

a mount assembly having a first axis for rotating the workpiece about said axis;

a motion device having a second axis for generating a rotational force for rotating said mount assembly;

a belt engaged about said first and second axis for translating rotational force from said motion device to said mount assembly thereby rotating the workpiece; and

a pivoting device presenting a pivoting axis and operably connected to said motion device for pivoting said motion device with respect to said mount assembly about said pivoting axis thereby adjusting tension of said belt by pivotable movement of said motion device with respect to said mount assembly.

27. An apparatus as set forth in claim 26 wherein said pivoting device is further defined by a plate pivotable about said pivoting axis and extending therefrom to a distal end.

28. An apparatus as set forth in claim 27 wherein said plate is operably connected to said motion device.

29. An apparatus as set forth in claim 28 including a lever connected to said distal end of said plate for moving said plate to and from said mount device thereby adjusting tension of said belt.